

To:

see form PCT/ISA/210
MARWALD
Patentanwalts GmbH

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MÜNCHEN

FRIST 12.12.05 Art. 15

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2005/000038

International filing date (day/month/year)
05.01.2005

Priority date (day/month/year)
05.01.2004

International Patent Classification (IPC) or both national classification and IPC
B64C1/40, B64C1/00, A62C3/08

Applicant
AIRBUS DEUTSCHLAND GMBH

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
☐ Box No. II Priority
☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☒ Box No. IV Lack of unity of invention
☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐ Box No. VI Certain documents cited
☐ Box No. VII Certain defects in the international application
☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 56.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523655 epmu d
Fax: +49 89 2399 - 4465

Authorized Officer

Salentiny, G

Telephone No. +49 89 2399-8337



Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has:
- ☒ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ not paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☒ all parts.
 - ☐ the parts relating to claims Nos.

Box No. V Reasoned statement under Rule 43b/s.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	11,12,15
	No: Claims	1-10,13,14,16
Inventive step (IS)	Yes: Claims	11,15
	No: Claims	12
Industrial applicability (IA)	Yes: Claims	1-16
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Reference is made to the following documents:

D1 : DE 44 17 889 A (BURKHART GROB) 23 November 1995 (1995-11-23)
D2 : GB 919 839 A (BRONZAVIA) 27 February 1963 (1963-02-27)
D3 : US 5 154 373 A (SCOTT ET AL) 13 October 1992 (1992-10-13)
D4 : US 6 286 785 B (KITCHEN N. D.) 11 September 2001 (2001-09-11)
D5 : US 6 114 050 A (WESTRE ET AL.) 5 September 2000 (2000-09-05)

Re Item III.

Claim 9 claims a dependency from claim 7 which deals with a non-metallic material. Claim 7, as a claim dependent from claim 1, seeks protection for an exterior skin fabricated from a burn-through resistant material consisting of a non-metallic material. A claim which is directed towards the combination of the non-metallic material with a metallic material (claim 9) is therefore no longer a claim dependent from claim 1 and the dependency of claim 9 ought to be limited to a dependency from claim 3.

Claim 16 defines the exterior skin (2) as made from aluminum or aluminum alloy. Such an exterior skin is not burn-through resistant as claimed in claim 1. The dependency of claim 16 therefore ought to be limited to a dependency from claim 2.

Claims 9 and 16 therefore are not comprised within the scope of the first group of inventions as lined out below.

Re Item IV.

The separate inventions/groups of inventions are:

1,5-8,13-15

Aircraft fuselage outer skin made of burn-through resistant, either metallic or non-metallic material.

2-7,9-16

Aircraft fuselage outer skin made of a hybrid compound, the compound combining a metallic and a non-metallic material.

They are not so linked as to form a single general inventive concept (Rule 13.1 PCT) for the following reasons:

D-1, col. 7, l. 18-21
Aircraft fuselage skin structures made of non-metallic compounds are well known in the art (e.g. D1, column 1, line 3-12). According to the features of claim 1 and departing from the teachings of D1, the external skin shall be fabricated from burn-through resistant material. The objective problem therefore can be looked upon as making an external fuselage skin burn-through resistant. Although the term burn-through resistance is vague, structures like those shown in D1 are not known in the art to have favourable burn-through resistance capabilities, especially as aluminum outer skins are indicated in the description of the application as not being considered to have burn-through resistance capabilities. The special technical feature of claim 1 (the burn-through resistance) is however absent in the wording of the independent claim 2. This claim addresses a particular construction of the fuselage skin which, according to claim 2 shall be made from a combination of metal and non-metal materials. Such a skin construction does not necessarily have to demonstrate burn-through resistance capabilities, especially as no further details of the skin construction are outlined.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Invention 1

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

The document D2 discloses the use of fireproof metallic fuselage skin structures for the purpose of achieving burn-through resistant structures (D2, page 1, line 10-14; 30-33). The alternative fuselage skin construction involving the use of a non-metallic burn-through resistant material is also known in the art (D3, column 2, line 62-65).

Dependent claims 5,6,7,8,13 and 14 do not contain any features which, in combination

with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step.

Claims 5-7 : Document D1 discloses a fuselage built of reinforced carbon-fibre (column 1, line 3-12, column 2, line 66). The subject-matter of claims 5-7 is thus not new in the sense of Article 33(2) PCT. The examiner concedes that this construction might not be particularly known as having high burn-through resistance capabilities. It is to be noticed however that the claim does not address any technical features which might provide any such properties to this well-known construction and essential features of this construction are therefore missing in the wording of the claims, contrary to the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT.

Claim 8 : Additional feature (titanium) known from D2.

Claim 13,14 : Additional features known from D3.

Invention 2

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 2 is not new in the sense of Article 33(2) PCT.

The document D4 discloses the addition of a reinforcement skin to a fuselage outer skin, the reinforcement being made of a material combining a non-metallic material and a metallic material (D4, column 1, line 67 - column 2, line 8). A fuselage material combining non-metallic and metallic material is also known from D5 (column 10, line 35-59).

Dependent claims 3, 4, 9, 10 and 16 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step.

Claims 3, 4, 9, 10 and 16 : Document D5 discloses a material combination of carbon and titanium or aluminum (Column 5, line 1-2, column 6, line 19-37). D4 explicitly mentions the improved burn-through resistance of such a layout (column 5, line 43-column 6, line 21). The subject-matter of claims 3, 4, 9, 10 and 16 is thus not new in the sense of Article 33(2)

PCT.

Claim 12 cannot be considered to be the result of an inventive activity according to Art. 33(3) PCT. Indeed, beside the fact that the claim suffers from a clarity problem (GLARE is a trademark and not a technical specification), the claim merely mentions the intended result (the material ought to be burn-through resistant).

Re Item VIII

Certain observations on the international application

Claim 1 is unclear (Article 6 PCT), as the term *semi-finished material* is not backed by any technical features. Describing this expression by the faculty of the material to be moulded by further processing is not suitable for determining a distinguishing technical feature. Indeed, it merely addresses a production method step, although the claim is directed towards a *product*.

The claims generally suffer from the absence of a clear distinction between the exterior skin (and its components) and the added skin structure (Article 6 PCT). Vague expressions used throughout the claims without any clear reference to which part of the skin structure they are meant to refer to ('material combination', 'sandwich design', 'composite material', 'material combination' only to name a few), make it difficult, if not impossible, to assess the intended scope of protection for the claims.

It is furthermore noted that reference numbers used in the description (page 4, 1st paragraph) do not appear to be shown in the drawings.